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ABSTRACT

The conceptual connections between aspects of critical thinking described by the Reflective Judgment Model, a theory of adult intellectual development, and a larger set of psychological principles derived from constructivist theories of learning are highlighted. In spite of parallels between these conceptual schemes, as well as the practical implications each has for secondary and higher education, there is still a dearth of literature dealing specifically with how to translate such theories into sound teaching strategies involving young adults. This limitation is addressed by describing introductory activities for units in human development and motivation in an undergraduate educational psychology course. The activities are evaluated using criteria associated with constructivist learning theory in general and with the Reflective Judgment Model in particular. Finally, it is argued that elements of the activities are generalizable to other levels, such as high school and graduate school, to other courses in teacher education, and to other domains of knowledge such as the humanities and physical sciences. Four appendixes present materials used as topics in the classes. (Contains 1 table and 27 references.) (Author/SLD)

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Constructivist Strategies for Teaching Educational Psychology

ED 402 316

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Abstract

I highlight the conceptual connections between aspects of critical thinking described by the Reflective Judgment Model, a theory of adult intellectual development, and a larger set of psychological principles derived from constructivist theories of learning. In spite of parallels between these conceptual schemes, as well as the practical implications each has for secondary and higher education, there is still a dearth of literature dealing specifically with how to translate such theories into sound teaching strategies involving young adults. I address this limitation by describing introductory activities for two units -- human development and motivation -- in an undergraduate educational psychology course. The activities are evaluated using criteria associated with constructivist learning theory in general and with the Reflective Judgment Model in particular. Finally, I argue that elements of the activities are generalizable to other levels (e.g. high school and graduate school), to other courses in teacher education, and to other domains of knowledge (e.g. the humanities and physical sciences).

Constructivist Strategies for Promoting Reflective Judgment in an Educational Psychology Course

Reflective Judgment

Epistemological aspects of critical thinking referred to as reflective thinking (e.g. Dewey, 1933) are conceptually related to a larger set of contemporary learning theories known as constructivism (e.g. Von Glasersfeld, 1989). One of the most comprehensive attempts to articulate and document elements of constructivist thinking among young adults is a seven stage theory of cognitive development called the Reflective Judgment Model (King & Kitchener, 1994). There are two reasons this theory is especially relevant in higher education. First, it addresses intellectual abilities necessary for coping with ill-structured problems (that is, complex dilemmas marked by conflicting evidence, antithetical arguments, and multiple solutions; see Wood, 1983). Second, the theory identifies changes in approaches to reasoning that typically occur during the post-adolescent years, when ill-structured problems become prevalent. Individuals operating at early stages of reflective judgment tend to ignore the ill-structured nature of many problems. Instead, they maintain a dualistic view of knowledge and often make naive appeals to authorities whom they see as indisputable sources of truth (see Table 1). Freshmen entering college often display these characteristics (Perry, 1970; (Kitchener & King, 1990). Individuals exhibiting middle stages of reasoning share a relativistic view of knowledge. These individuals are likely to accept the uncertainty inherent in problems and believe that truth is based on subjective or contextual variables. Although multiple opinions are acknowledged, they are often seen as equally valid regardless of source, situation, or evidence. Students typically make a transition to middle stages of reflective judgment early in college and remain there throughout their undergraduate years.

[Insert Table 1 about here]

The term "reflective" is reserved to describe the reasoning characteristics of individuals operating at the latest stages of the Reflective Judgment Model. As Table 1 shows, it is here that the direct relationship to constructivist theory becomes apparent. For example, King & Kitchener (1994, pg. 70, italics added), suggest that the hallmark of stage 6 reasoning is "the process of ... *constructing* tentative, personal conclusions." Within the span of several pages, the authors repeatedly highlight this constructivist theme:

> The major development of Stage 6 is the recognition that problems that are complexly understood (for example, understanding that a problem can be

> approached from multiple perspectives, incorporating multiple kinds of evidence) require some kind of thinking action before a resolution can be *constructed* (pg. 67).... Knowledge is *constructed* into individual conclusions about ill-structured problems on the basis of information from a variety of sources (pg. 68).... Ill-structured problems that press the individual to look for shared meaning across contexts do exist. Further, those who reason from this perspective assert -- and demonstrate -- that solutions to such problems must be *constructed* rather than simply found (pg. 70).

In describing assumptions underlying the highest stage of reasoning (stage 7), the authors reiterate that "knowledge is the outcome of a process of reasonable inquiry in which solutions to ill-structured problems are *constructed*" (pg. 71). Although stage 7 is more sophisticated than stage 6 in that the individual is able to understand the larger system of knowing in which conclusions are embedded, the constructivist theme from stage 6 remains constant:

> Knowledge is *constructed* by using skills of critical inquiry or by synthesizing evidence and opinion into cohesive and coherent explanations for beliefs about problems (pg. 70).... Such reasonable judgment is possible because the individual clearly understands the process of knowing as an abstract one and endorses his or her own in *constructing* what is known or believed to be true.

In summary, the Reflective Judgment Model describes aspects of critical thinking that represent an ideal many people hold for the most educated members of our society. A person who reasons at the highest stages of reflective judgment not only exhibits sophisticated critical thinking behavior (e.g. the execution of discrete argument skills) and metacognition (e.g. the ability to invoke an effective strategy at an appropriate time), he or she also maintains a conscious awareness of individual assumptions about thinking and knowledge itself (see Kitchener, 1983). Furthermore, these epistemic assumptions manifest themselves as dispositions toward thinking and learning that have met rigorous criteria for philosophical justification (e.g. the assumption that people actively search for meaning in their world and that one should be open-minded in the pursuit of truth). Although researchers have shown how people construct knowledge at all ages and stages of human development, the Reflective Judgment Model is especially relevant when talking about college students. The reason for this is due to the inevitable confrontation with ill-structured problems that young adults face, combined with the fact that coping with such problems requires a certain level of epistemological sophistication. The extent to which college educators can hasten the growth of their students toward higher stages of reflective judgment is a question that is still open to debate (see Scheurman, 1995).

Nevertheless, experts in educational psychology have posited generalizable principles of constructivist learning theory and recommended that instruction at any level be grounded in such theory (see Scheurman et al., 1995). Since the Reflective Judgment Model is based on constructivist principles, it is useful for college educators to look carefully at these general principles and their implications for designing instructional strategies.

Constructivism

Myriad reviews of constructivist learning theory have emerged over the past several years (e.g. Anderson et al., 1995; Phillips, 1995; Brooks & Brooks, 1993). Most of these reviews describe constructivism in terms of a common set of principles. One principle is that new knowledge is inextricably linked to prior knowledge. The implication of this principle is that for effective learning to occur, the teacher must devise ways to make students explicitly aware of their own conceptions (and misconceptions) about a particular topic or domain (or, in some cases, their conceptions about the nature of knowledge itself). A second principle of constructivist theory is that knowledge is situated in a particular context. This implies that the more authentic and varied the situations in which students interact with new concepts, the more likely their understanding of these concepts will transfer to novel and everyday situations. A final principle of constructivism is that contexts are not just abstract entities defined by domains of knowledge; they are formed amidst the give and take among perspectives maintained by actual people. The implication of this principle is that learning is a social enterprise that occurs best when students are confronted with multiple perspectives through dialogue with teachers and other students (see Vygotsky, 1978).

One school of education (UC-Berkeley) has adopted a developmental-constructivist model for pre-service teacher education, based on evidence that pre-service teachers tend to evolve through stages of professional development (Black & Ammon, 1992). Specifically, research at Berkeley suggests that students in their program evolve from behaviorist conceptions of pedagogy (e.g. the goal of instruction is to transmit facts and procedures by showing and telling) to conceptions that are decidedly "constructivist" in nature. For example, education students tend to adopt a view of teaching that is at first rather global (e.g. the goal of instruction is to improve conceptual understanding by engaging students in provocative activities) but which eventually becomes more differentiated and integrated (e.g. the goal of instruction is to help students develop reflective ways of thinking that can lead to better understanding).

In spite of implications of constructivist theory for learning at all levels, and especially given the intimate connection between tenets of constructivism and aspects of adult reasoning articulated by the Reflective Judgment Model, there is still a surprising paucity of reported

efforts to translate theory into sound methods of college teaching. One exception to this pattern is a recent monograph that was published after a series of professional development workshops for general education faculty at a small midwestern university (Russo et al., in press). What follows is a description of two activities highlighted in that report. These activities are used in an undergraduate Educational Psychology course; each one seeks to promote reflective judgment through constructivist approaches to teaching and learning. The context is a five credit course required of all middle and secondary education majors, usually taken during the sophomore or junior year. The class meets twice a week for 2 hours and 15 minutes; students also engage in a 25 hour field experience in a middle or high school classroom. Since most of the students are around twenty years of age, the most representative approach to reasoning is described by the relativistic stages (3 or 4) in the Reflective Judgment Model (Kitchener & King, 1990), whereas the level of reasoning desired by their professors is best described by stages 5 or 6 (Scheurman, in press). It is also common for a few older, non-traditional students to be enrolled in each class. These students may already be operating at higher stages of reflective judgment (in fact, this is a common observation made by professors of the course). Each activity will be described separately, and then both activities will be evaluated collectively in light of the constructivist learning principles described above.

Activity One:
Developmental Theory and Students' Social-Moral Problems

This activity is designed to introduce the first unit of the course on adolescent development. The lesson has four specific objectives. Students will: (1) begin to understand the nature, function, and limitations of psychological theories in general; (2) identify some of their own and their colleagues' personal theories about an adolescent "problem" (as well as reveal their "theories about theories"); (3) become familiar with several prominent developmental theorists; and (4) learn some of the "rules of engagement" by which the class will operate.

Materials

In addition to one hand-out designed by me (Appendix A), there is a collection of hypothetical statements in which a textbook author (Sigelman & Shaffer, 1991) synthesizes seven psychological theories by imagining that seven famous theorists were asked to offer an explanation for the behavior of a male and a female teenager who find themselves faced with an unexpected pregnancy. (For example, how would Freud explain the actions of the young couple? See example in Appendix B.)

Procedures

Private responses and group interaction. When students enter the classroom, they receive a copy of the student handout with a number at the top indicating their group assignment. Each student sits at a numbered table and is immediately instructed to begin thinking about the issue of teenage pregnancy. For example, students are asked to list at least three reasons why our society is facing this "problem" and then to synthesize these into a preliminary "theory" of adolescence that explains the phenomenon. After everyone has had at least 10 minutes to consider these questions privately, I ask them to proceed with step 2, in which individuals share their reasons and discuss one another's initial theories.

Whole class discussion. Following 10 minutes of group interaction, each group designates a spokesperson who summarizes the common themes that emerged; This is followed by open discussion of individual's specific reasons for the high incidence of teenage pregnancy in our society. I probe students for deeper responses, trying to encourage them to "think like a theorist." For example, when a student says something like "teenagers are bombarded with media messages condoning casual sex," I encourage them to consider the nature of the relationship between watching a behavior on television and engaging in the behavior itself (foreshadowing a discussion of social learning theory). Or, when a student says "adolescents think they will make themselves happy if they have a baby," I press them to consider their own assumptions about human nature (e.g.: What is your definition of "happiness" and what drives people to seek it? What are some possible causes of teenage *unhappiness*? What is it about human nature that makes teenagers think having a baby will satisfy them and why are they often disappointed?). Finally, I press students to see the importance of underlying assumptions by asking them to speculate about my own assumptions in making the assignment (e.g. the assumption that *teenage pregnancy is a problem at all*).

Preparation for role-playing exercise. After 30 minutes of class discussion, I inform students that by virtue of their group assignment, they have accepted a challenge to assume the role of a famous person whose theory we will compare with our own ideas about teenage pregnancy. When they turn over the number at their table, they discover that their group has been assigned one of the following theorists: Freud, Erikson, Piaget, Skinner, Bandura, Bowlby, or Riegel.[1] Members at each table receive a copy of the prototypic response their theorist might have given to explain why a hypothetical teenage couple might find themselves in the

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[1] Since no women were represented in these materials, a colleague of mine is working to create a prototypic response through the eyes of Carol Giligan and I am doing the same for Nel Noddings. Also, we have considered asking one of our multicultural colleagues to help us draft a general response to this issue as well; for example, is there something about Native American culture that might help explain the incidence of teenage pregnancy among American Indians?

predicament of an unexpected pregnancy. Each group has 25 minutes to read and discuss their theorist's response. They then prepare a summary of their hypothetical views about the young couple in particular, and extrapolate what they think are the general tenets of the theory. We hold a drawing to determine a spokesperson from each group, who then has a few more minutes to make sure they are ready to represent their group during a panel discussion. One unselected person from the class is asked to moderate the panel.

Panel discussion and debriefing. After a break, designated theorists take center stage, where the moderator introduces them and asks each one to share the highlights of his or her theory and then to apply their theory to the case study. I try to select a student who will feed the panelists questions, encourage them to interact with one another, and seek inquiries from the audience. I usually prep this person to give each theorist's "associates" in the audience a chance to add anything to the initial presentation. By the time this public forum ends, the class usually has questions regarding one theory or another, which we respond to during the remaining part of the class. It is also not uncommon for young adults to express frustration at the limits of particular theories. Without knowing it, they often express epistemological assumptions regarding the multiplistic nature of opinions, the impossibility of ever finding the truth, and so on. I also encourage this, since beliefs typical of various stages of reflective judgment become visible, causing a healthy tension in the room. In addition to exposing students to various developmental theories, I try to leave them with a sense that we all have "theories" of our own, that our theories probably share some elements with others, and that one of our purposes in the class is to examine different ideas and martial arguments that will help us make meaning in our roles as middle and secondary school teachers. The class ends with these large questions still on the table.

Follow-up. As a homework assignment, students are assigned a more detailed case study to read ("Troubled Amy," Greenwood and Parkay, 1989) in which a teenage girl approaches a young teacher, asks her to promise confidentiality, and then burdens the teacher with a request to help see her through an abortion. The case is used to demonstrate how theoretical awareness can help us better understand students in authentic situations. Students are prompted to reconsider how personal beliefs help shape our actions in the face of ill-structured problems. I often ask students to submit a brief statement of personal theory explaining the phenomenon of teenage pregnancy in general as well as their response to Amy's case in particular. This gives me a chance to make a formative assessment of what students took from the initial lesson. The case study itself is the subject of discussion a few days later when the class considers the topic of moral development. Throughout the unit, we refer to the topic of teenage pregnancy, and students have a chance to expound on their "personal theory" as one option on a reflective essay

that culminates the unit. We also revisit the issue during subsequent units, or whenever questions arise that are relevant to the nature, function, and limitations of personal and psychological theories.

Activity Two:
Motivation Theory and Students' Learning Problems

I have used approaches similar to the one described above in conjunction with other units in the same course. For example, I designed an activity for the opening day of a unit on motivation with objectives that are similar to those listed in the previous section. Once again, the activity is designed to create a context within which concepts introduced throughout the unit may be embedded and discussed.

Materials

As in the first activity, students receive a handout as they enter class (Appendix C), including a description of the lesson for the day along with a number indicating group assignment. Before the actual lesson begins, each student is asked to write a succinct definition of the word *motivation*. This is followed by a variation on a K-W-L strategy (Carr & Ogle, 1987) in which each student is then given an opportunity to share something that they KNOW or something they WOULD like to LEARN about motivation during the unit.

Procedures

First encounter with student profile. After this brief introduction, each group receives one of five motivational case studies. Taken from a book by Stipek (1993), these case studies profile five prototypic students in school situations, each of whom embodies a different set of concepts relevant to motivational theory. The names of the profiled students are *Defensive Dick* (a case study that reveals the effect of student attributions for success and failure, including the notion of learning and performance goals), *Safe Sally* (issues of optimal challenge, risk-taking, and failure tolerance), *Satisfied Sam* (intrinsic and extrinsic motivation), *Hopeless Hannah* (learned helplessness), and *Anxious Amy* (test anxiety). A sample of one of Stipek's profiles is included in Appendix D. Group members review the circumstances pertaining to their assigned student and decide on a preliminary answer to the following questions:

1. Does this sound like a motivation problem? Why or why not?
2. Consider your answer and explanation to question #1. Whether YES or NO, your answer probably reveals something about your personal definition of motivation. Look back at your initial definition and modify it based on your thinking about this student profile.

Preparation for I.E.P. After devoting 15 minutes to discussion of the profile, students are instructed to proceed with phase two. During this phase, students assign hypothetical roles consisting of individuals with a stake in the "success" of the student. These may include a principal, parent(s), regular classroom teacher, school psychologist or "special educator" (gifted/talented or learning disabled), and, finally, the student her- or himself. The group prepares to hold an Individual Education Plan meeting (the nature and function of an I.E.P. is defined for the class), with the following goals in mind: (a) to identify and consider how multiple perspectives may impact the discussion; (b) to determine the best explanation for this student's behavior or alleged "problem"; (c) to discuss alternative solutions for dealing with the student and to formulate a set of recommendations from among those alternatives. Students are given just enough time to prepare their roles, but not enough time to script the ensuing meeting. I have found that 15 minutes allows students to prepare adequately without stifling the spontaneity and creativity that makes the meetings more authentic. Students take a short break before the I.E.P. meetings begin.

Conducting and debriefing the meetings. During the break, the room is arranged in the style of a "theater-in-the-round." That is, one table is placed in the middle with others surrounding it on the outside. Students are informed that only ONE meeting will be held at a time. These take place at the center table while the rest of us listen on the periphery. Each group has 10-15 minutes to conduct their meeting, after which I intervene and solicit input from the "audience" concerning their interpretations of what they heard. As indicated, the case studies were masterfully written to serve as prototypes of specific motivation concepts. Therefore, I keep detailed notes of which concepts come up during each follow-up discussion, even if the students don't use exact theoretical terms. In my experience, many key ideas emerge during these conversations, and, given the diverse nature of the case studies, numerous myths about what constitutes a potential motivation "problem" are challenged (e.g. Safe Sally profiles a popular high school girl who gets straight A's and participates in numerous extra-curricular activities; however, she also exhibits, albeit perhaps less visibly, an obsession with "performance goals" (Dweck, 1986) and an unwillingness to challenge herself for fear of failure). All groups take their turn "on stage" with whole class discussions following each vignette.

Follow-up. At the end of the class, students are given the following homework assignment (see Appendix C):

(a) skim the chapters in the text devoted to motivation and select at least three specific concepts or principles that are relevant to the student;

(b) describe HOW each concept is relevant;

(c) suggest an action plan based on the concept.

By following up in this way, the introductory role-playing situation also serves as an advance organizer for student readings and the content of the unit. Students regroup during the next session, compare what they found, and synthesize their findings in a graphic poster display which they then share with the rest of the class. I only intervene to correct possible misunderstandings of something they read or to raise questions relevant to potential misconceptions (as I see them) about the profiles themselves. I am careful to avoid intervening with "the right answer" during these presentations, preferring to allow students to interact with one another over their findings and recommendations. In a subsequent class, I revisit each case study one more time to "fill in" the gaps with relevant concepts and principles that they may have overlooked (or ones not covered in the text). This is accomplished by telling the class that I did the same homework assignment as they did, for all five students, and that I would like them to compare their conclusions with my own (their posters are still hanging in the room). I also ask them to critique my interpretations of the students' "problems" and to suggest additional implications and recommendations.

Discussion

After two decades of research, psychologists are finally beginning to translate theoretical claims about adult intellectual development into practical recommendations for college teaching. For example, King and Kitchener (1994) conclude their book Developing Reflective Judgment with a chapter devoted to "fostering reflective judgment in the college years" (pp. 222-257). In their final chapter, they offer 11 "observations and suggestions," including lists of sample developmental assignments. Although relevant and important, these suggestions are broad and general, leaving practitioners with the task of applying them to specific situations and domains. For example, to foster stage 5 reasoning, the authors suggest that students "compare and contrast ... competing points of view," citing evidence and "determining which proponent makes the better interpretation" of it (pg. 253), whereas for stage 6 reasoning, teachers are encouraged to have students "develop and defend firm arguments for a particular point of view" (pg. 254). To support these instructional goals, King and Kitchener offer similarly abstract recommendations. For example, professors should support stage 5 reasoning by "legitimizing students' struggle to adjudicate between competing interpretations and perspectives, both cognitively and affectively" (pg. 253); or, for stage 6, by "emphasizing the importance of developing and defending arguments about ill-structured problems, as well as the difficulty in doing so" (pg. 254).

Although most college professors would agree that these are noble suggestions, and ones they implement to a greater or lesser degree, research suggests that the most typical method for presenting "conflicting points of view" is to offer them during a lecture, with discussion of them reserved for "upper division courses" (Scheurman, in press). Seldom is time provided in entry-

level courses for students to struggle with the nuances of argument, to interpret claims in light of perspectives, or to wrestle their way to a justifiable endorsement of a claim about some issue. I often hear reports of frustration from students who learn about constructivist learning theory but then have to endure professors who employ teaching techniques that are inconsistent with the most rudimentary principles of constructivism. Throughout their general education, these students are often lectured at by authorities and then asked to regurgitate discrete tidbits of knowledge that comprise the content of a particular course. Unfortunately, this practice even pervades professional education courses, leaving pre-service teachers with few role models for constructivist teaching practices during their formative college years.

The activities presented in this paper provide examples of ways to break this pervasive non-constructivist approach to college level teaching. By asking students to place themselves in simulated authentic contexts and then to reflect on and discuss those contexts throughout a unit of study, these activities are consistent with many of King and Kitchener's specific suggestions for fostering reflective judgment. For example, by introducing the active, interactive nature of the course right from the onset, and by affirming the value of individual opinions on controversial issues such as teenage pregnancy, students gain respect as people and a feeling of self-efficacy regardless of the epistemic assumptions they exhibit (pg. 231). Furthermore, since students can identify personally with the issues (nearly all of my students have been close to a situation involving a teenage pregnancy and it is rare that I find a student who cannot identify intimately with one or more of the profiles in motivation), it also signals to students my recognition that the challenges they will face and the support I will give them in the course are grounded emotionally as well as cognitively (pg. 246).

By choosing to couch these two units of study in terms of a search for meaningful interpretations of complex situations rather than as a mere presentation of oversimplified facts and principles, these activities are consistent with three other suggestions for fostering reflective judgment. First, students gain first-hand familiarity with ill-structured problems within the domain of educational psychology (pg. 233ff). Second, the activities "create multiple opportunities for students to examine different points of view on a topic reflectively" (pg. 237). Indeed, the strength of these exercises is that students must assume different perspectives in public. These perspectives are sometimes based on existing theory so that students can "try on" new ideas under the auspices of hiding behind someone else's ideas. Other times they are based on their own or their colleagues' personal beliefs, causing them to experience the dissonance of disagreement. Either way, a third benefit of the activities is that such perspective-taking "creates opportunities and provides encouragement for students to make judgments and to

explain what they believe" (pg. 238ff), especially since students revisit the same situation in order to revise their judgments as new evidence becomes available throughout the unit.

Since our exploration of these topics is active, interactive, and public, we are able to accomplish several other suggestions made by King and Kitchener. First, these activities enable me to "informally assess students' assumptions about knowledge and how beliefs should be justified" (pg. 240ff). In addition to influencing the kind of summative assessments I use to monitor the progress of my students, this formative assessment has the added advantage of enhancing my own enjoyment in teaching. Socrates' imperative as a teacher was to "know thyself," but when asked what he considered the proper subject of study, he claimed that a teacher should always "study thy students." By "acknowledging that students work within a developmental range of stages," (pg. 242), I can delight in the give and take among students of different ages and stages. I can also "target expectations and goals accordingly," reducing potential frustration when students make naive statements, as well as "provide both challenges and supports in interactions with students" (pg. 244ff).

Conclusion

The activities described in this paper were designed with several key principles of constructivist learning theory in mind. First, both activities were designed to elicit students' prior knowledge, conceptions, and questions about a particular unit of study through an open-ended inquiry. Second, each activity created a provocative, authentic context in which aspects of development and motivation could be further explored. Finally, the activities required students to adopt or at least consider multiple perspectives in arriving at a judgment about these relevant issues. These principles have been recognized by many experts as the core of a psychological perspective that should guide the preparation of K-12 teachers (see Anderson et al., 1995; Black & Ammon, 1993). There is a growing consensus that the types of activities described here are especially effective for teaching domains such as science (Driver et al., 1994; Carey & Smith, 1993; Roth, 1993), math (Cobb, 1994; Schoenfeld, 1991), and history (Wineburg, 1991), to pre-college level students. Are techniques such as these appropriate for adults? My involvement in research and faculty development activities with middle, secondary, and post-secondary teachers suggests that they are. I recently used the motivation activity described in this paper during a full day workshop with teachers and administrators, and the wealth of practical, procedural, and declarative knowledge that was brought to each case study made for a dynamic discovery of numerous motivational principles. Afterwards, participants were able to identify elements of the lesson that were consistent with the constructivist principles listed above.

A colleague of mine with whom I teach a professional education course in the techniques of secondary teaching recently informed me that while all of these "constructivist" techniques may have their place in middle and high school, he believed teachers had a more important moral obligation to "prepare students for the way it's going to be in college." It was immediately evident what his meaning was: pre-college students must be lectured at and made to take notes while one person in the room talks, since this is the way college is. I do not disagree that we have a responsibility to prepare high school students for college, and although I am not opposed to the lecture as a viable teaching strategy[2], I do not believe that ineffective instruction at the college level justifies us to provide ineffective instruction before college. In the same vein, historically ineffective teaching at the college level also does not justify that we perpetuate the cycle in the future.

Those who study the intellectual development of young adults are waking up to the fact that methods consistent with constructivist learning principles are one of the best ways to promote reflective judgment in college, and they have begun to issue recommendations to that effect. Unfortunately, there has been a lack of clearly defined examples demonstrating how these principles and recommendations translate into actual lessons in the college classroom. Although the activities presented here address this need, the discussion was limited in two ways. First, in spite of their intuitive, practical, and theoretical appeal, research is still limited as to the impact of such activities on the long term dispositions of students. Second, there is still much work to be done to document the degree to which these constructivist strategies influence students' performance on traditional measures of student achievement. Although I am engaged in a program of research to investigate these questions, there is already sufficient evidence to suggest that activities such as those presented here deserve serious consideration as exemplary ways to approach general undergraduate education. In the area of pre-service teacher education, where success is measured by the ability of students to translate their knowledge into effective teaching strategies, it is even more important that students experience active learning situations like those we hope they will create for their future students.

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2 Even for this technique, there are constructivist strategies for augmenting a lecture that make it more active and interactive in nature. For an example of one such technique in the domain of history, see the description for "interactive slide lectures" developed by the Teacher's Curriculum Institute (1994).

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Table 1. Summary of stages from the Reflective Judgment Model (extrapolated from King & Kitchener, 1994; pp. 14-16) with corresponding reference to "constructivist" view of the meaning-making process.

Stage	Knowledge is viewed as:	Beliefs are justified by:	Relationship to Constructivist View
1	Absolute and certain	Beliefs reflect reality directly; no need to justify them	Meaning comes from direct observation
2	Certain but not immediately available	Information from authority	Meaning comes from observing or receiving information
3	Sometimes certain but often temporarily uncertain	Future information from authorities or what feels right at the moment	Meaning may not be available now but depends on personal biases until truth is obtained
4	Uncertain and ambiguous	Personal or situational variables (e.g. lost data)	Meaning is idiosyncratic & relative; my meaning (truth, opinion) is as good as yours
5	Contextual and interpretable	Rules of inquiry within a particular context	Meaning is subjective but defensible within a perspective
6	Interpreted across contexts	Comparing evidence and evaluating opinions across perspectives	Meaning is constructed on the basis of criteria such as weight of evidence, utility, or pragmatic need for action
7	Tentatively certain and based on reasonable inquiry	Evaluating, re-evaluating, and integrating, if need be, evidence and arguments from multiple perspectives	Meaning is constructed using criteria such as risk, probability, consequences, or inter-relationships among factors

APPENDIX A

Educational Psychology - scheurman
Coming to terms with DEVELOPMENT

Today in Educational Psychology, you will be involved in a role-playing exercise. Please prepare to involve yourself in the following steps.

1. Before class begins, think (on your own) about the overall issue of teenage pregnancy. List several reasons, as quickly as you can, why you think this has become a major "issue" or "problem" in our society? After you list a few reasons, see if you can summarize you thoughts into a personal "theory" that might explain the phenomenon of teenage pregnancy.

   1.

   2.

   3.

   General explanation, or "theory":

2. Next, share your theory with other students at your table. Compare and contrast theories. What are some common themes? On what points did you disagree?

   Agreements: Disagreements:

3. Now you will be assigned a famous "theorist" who might have offered an explanation for the phenomenon of teenage pregnancy. As a group, read this person's explanation and discuss it. Prepare a member of your group (TBA) to assume the role of this person. As part of a panel discussion, this person will need to (a) summarize the basic tenets/assumptions of their theory; (b) explain to the audience how their theory explains the behavior of teenage sexuality; and (c) be prepared to answer questions on the matter.

   To assist you in summarizing this person's theory, you might keep in mind that every theory rests on certain "assumptions" (about human nature, about what counts as reality, about how we discover the truth of a matter) and certain tenets (principles of human behavior, propositions, "facts"). If you are having trouble with this, you might see if you can fill in some of the blanks below, given what you know of this theory.

   - If _____ , then _____ .
   - When _____ , people will _____ .
   - _____ causes _____ (effects).
   - People are more likely to _____ than they are (or when) _____ .
   - A fundamental characteristic of human nature is _____ .
   - Individual behavior depends on _____ .
   - Abnormal (anti-social? immoral? unintelligent?) behavior stems from _____ .

   ON THE BACK OF THIS PAGE, WRITE DOWN AT LEAST THREE BASIC TENETS/ASSUMPTIONS OF YOUR THEORY, AND DRAFT SOME NOTES THAT SUMMARIZE HOW THE THEORY EXPLAINS THE PHENOMENON OF TEENAGE PREGNANCY.

Appendix B

Example of developmental theorist's response to issue of teenage pregnancy. This and five other prototypes were borrowed from Sigelman & Shaffer (1991), Chapter 2 (pp. 31-66), *Theories of Human Development*.

I welcome this opportunity to return to life to comment on the problem of teenage pregnancy. As you know, I was always fascinated by sex. This matter of teenage pregnancy is right up my alley! We must realize that teenagers experience intense conflicts during the genital stage of psychosexual development. Their new sexual urges are anxiety provoking and must somehow be managed. Moreover, the sexual conflicts of earlier psychosexual stages often reemerge during adolescence. Of course, I would need to find out more about the early childhood experiences and psychic conflicts of Sheila and James to pinpoint the specific causes of their behavior, but I can offer a few suggestions.

Since I've been back I have uncovered some revealing psychoanalytic studies of pregnant teenagers. In one study of 30 teenage girls,[1] many of

[1]For further information about the works "Dr. Freud" refers to, see Babikian & Goldman (1968), Hatcher (1973), and Schaffer & Pine (1973).

Box 2.2
Psychoanalytic Theory Applied: Freud on Teenage Pregnancy

them were found to be very dependent individuals who had weak egos and superegos. Perhaps Sheila and James did not have strong enough egos and superegos to keep their selfish ids in check; perhaps they sought immediate gratification of their sexual urges with no thought for future consequences or morality.

But it is also quite possible that these teenagers were motivated by inner conflicts that had their roots in infancy or the preschool years. For instance, many pregnant girls come from homes without fathers.[1] Perhaps Sheila never fully resolved the Electra complex of the phallic stage and was unconsciously seeking to possess her father by possessing James and having a baby. James, of course, might have been seeking to gratify his unconscious desire for his mother through Sheila. Teenagers often seem to distance themselves from their parents as a defense against reawakened Oedipal feelings of love for the opposite-sex parent.

All these possibilities suggest that Sheila and James may have had an especially difficult time dealing with their new-found sexuality. I'll bet my reputation that one or both of them has personality problems rooted in early childhood experiences. Without being consciously aware of what is motivating them, they may well be seeking to gratify needs that were never adequately met in their early years.

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APPENDIX C

MOTIVATION

Case Study Role Play

We will begin class today with a discussion of what you "know" and what you "want to know" about the topic of motivation. To help us get started, define the word **motivation**.

You will notice that your group has been assigned a student case study. After our initial discussion, your group's task is to review the circumstances pertaining to this student's situation in school, and then decide on an answer to the following questions:

1. **Does this sound like a motivation problem to you? Why or why not?**
2. **Consider your answer and explanation to question #1. Whether YES or NO, your answer probably reveals something about your personal definition of motivation. Look back at your initial definition and modify it based on your thinking about this student profile.**

Next, imagine that you are members of a group of concerned individuals holding an I.E.P. (Individual Education Plan) meeting with this student as the subject. Assign group members one of the roles listed below, and conduct the meeting with the following goals in mind: (a) to determine the best explanation for this student's "problem" (assuming you decide she has one); (b) to discuss alternatives for dealing with the problem (from various perspectives); and (c) to form the nucleus of a set of recommendations for dealing with the student.

- **A principal to direct the meeting;**
- **At least one parent of the student;**
- **At least one regular classroom teacher;**
- **At least one school psychologist or other "specialist;"**
- **The student her- or himself.**

Following the role-play, your homework assignment is to read through the chapters on motivation in your text until you find at least THREE specific ideas, concepts, or specific strategies that you think address this student's situation in a relevant way. Come to class prepared to discuss what the concept or strategy is, how it relates to the student, and how it might translate into an actual plan for dealing with the situation. List the page number of all concepts or strategies you choose so we can refer to them later.

	Concept or strategy	Relation to student	Action Plan
A.			
B.			
C.			

Appendix D

Example of student motivational profile. This and four other profiles were borrowed from Stipek (1993), Chapter 1 (pp. 1-8), *Profiles of Motivational Problems*.

DEFENSIVE DICK

Dick is one of the worst students in his fourth-grade class. Poor performance, as far as Dick is concerned, is inevitable. So he puts his energy into preventing anyone from interpreting his poor performance as evidence of a lack of ability. Unfortunately, the kind of strategies he uses to avoid looking dumb do not lead to improved performance.

His strategies are clever and often missed by the teacher, who does not have time to monitor him closely. For example, one morning Dick is working on an assignment to answer ten questions about a story the children were supposed to have read. The teacher shifts her attention from one child to another, monitoring each student's work to the best of her ability while answering questions. Dick asks the teacher several questions, but he is careful to give her the impression that he is working diligently to answer most of the questions on his own. Actually, he receives the rest of the answers by asking classmates or by copying his neighbor's paper. Thus, Dick manages to complete the assignment without reading or understanding the story.

That afternoon the teacher asks students to take out yesterday's assignment, which required the use of a dictionary. Dick makes a show of looking through his desk for an assignment that he knows, his teacher knows, and his classmates probably know, he has not done.

During a social studies test Dick sharpens his pencil twice, picks up his eraser that falls to the floor, and ties his shoelaces. He makes no attempt to conceal his lack of attention to the questions. To the contrary, he seems eager for everyone to notice that he is not trying. The teacher publicly reminds him several times to get to work, giving Dick and his classmates the message that if he tried, his performance, which will otherwise inevitably be poor, might be better. This, of course, is exactly the interpretation Dick desires.

Dick's strategies serve their purpose at least in the short run. He manages to complete some assignments with a respectable, if not an excellent, level of performance. By fooling around while he is supposed to be taking tests (when other strategies, such as cheating, are not available), he at least avoids appearing dumb, the logical conclusion associated with poor performance and high effort. By not trying, he creates an alternative explanation for failure, leaving open the question of whether he would have done well on the test if he had tried.

The tragedy is that Dick's ingenious efforts to avoid looking dumb are self-defeating. He makes little progress in mastering the curriculum, and failure becomes increasingly inevitable. Eventually Dick will give up trying to preserve an image of himself as a capable person, and he will resign himself to the status of one of the "dumb" kids in the class. If he continues this self-destructive game, he will soon look like Hopeless Hannah, who does not even try to look smart.